

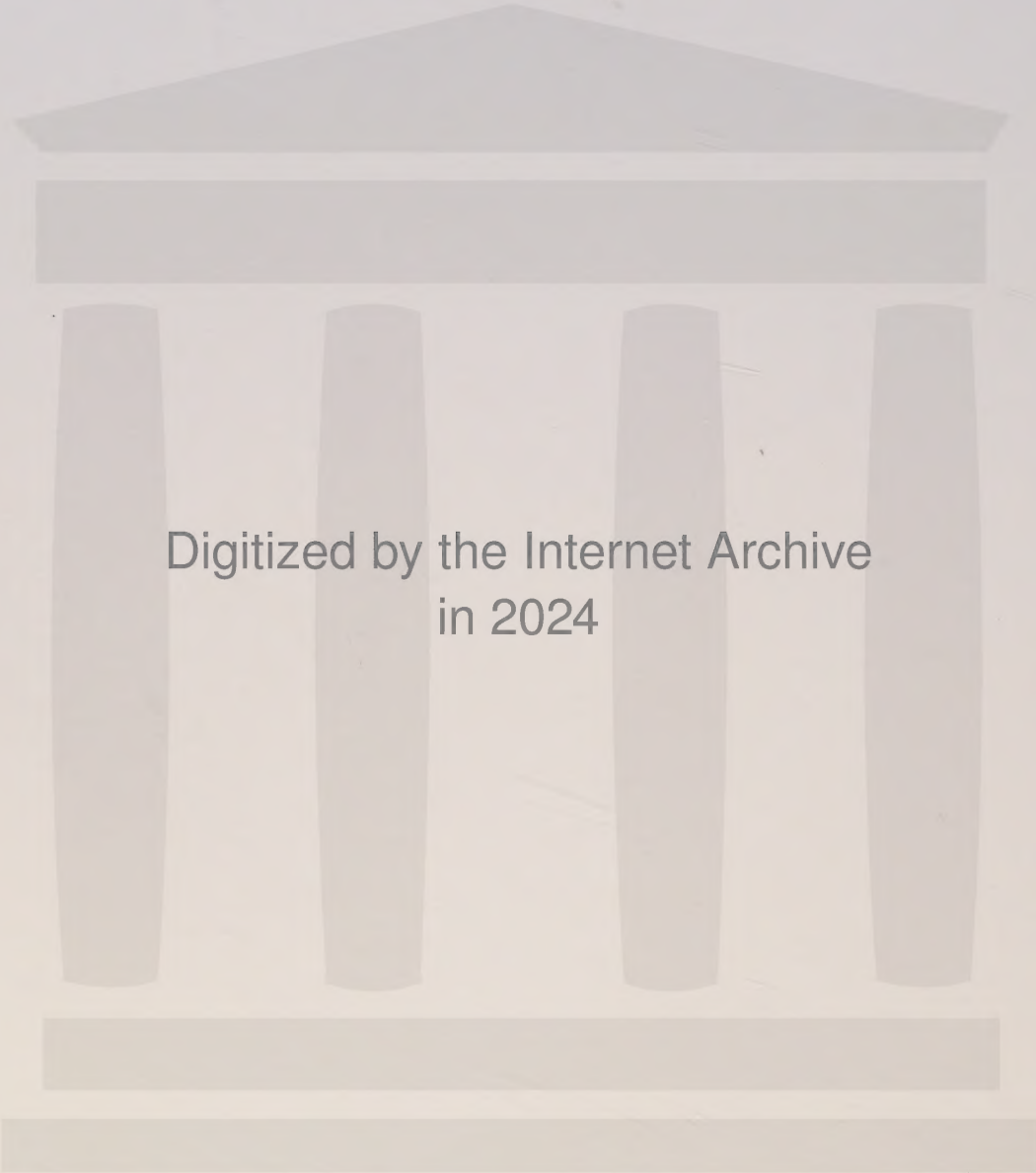
CORAL REEFS A TO Z

COLORING BOOK



Terry Pierce

Illustrated by Kristen Kofsky



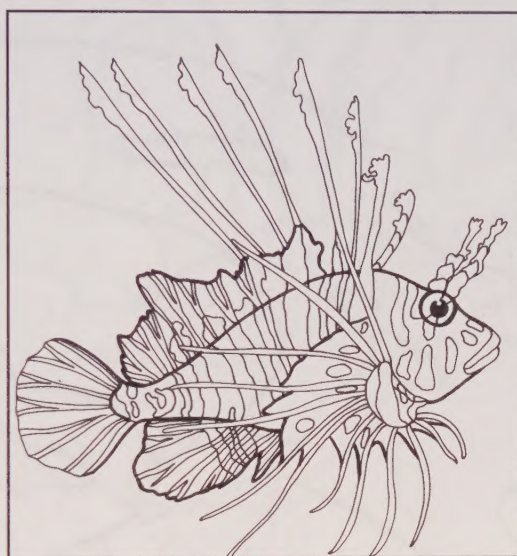
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CORAL REEFS A TO Z

COLORING BOOK

with an emphasis on Hawai'i and the Pacific Ocean



Terry Pierce

Illustrated by Kristen Kofsky

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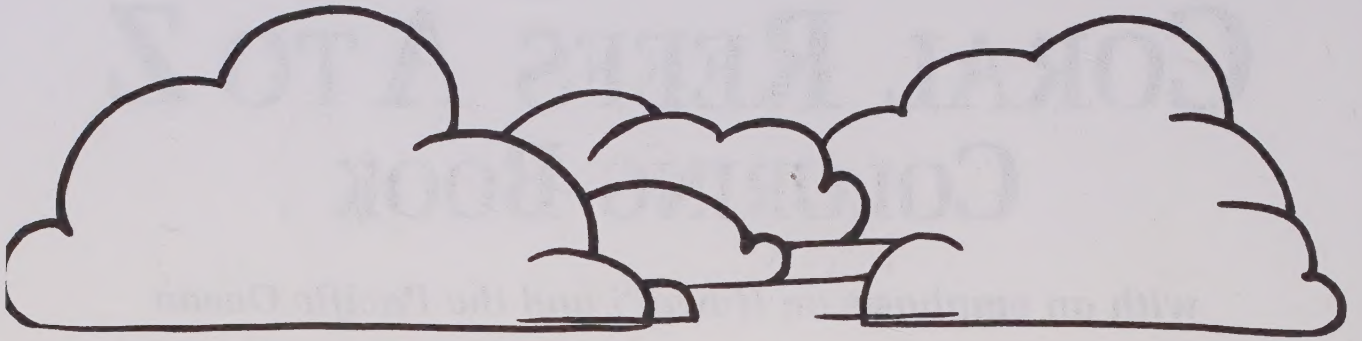
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A is for **atoll**, a ring-shaped or U-shaped coral island and reef with a body of water in the middle called a lagoon. An atoll forms when an island sinks, leaving only the growing reef that surrounded it.



B is for **bivalve**, a soft-bodied animal with a shell. “Bi” means “two.” A bivalve has a two-part shell, just as a bicycle has two wheels. Many different bivalves are found in coral reefs. The most common ones are oysters, mussels, and clams.

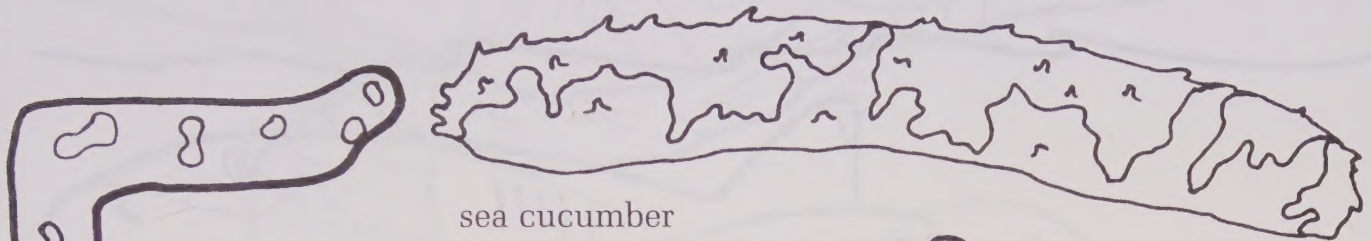


C is for **coral**, formed from the hard outer coverings (exoskeletons) of tiny animals called coral polyps (see the letter **P**). Corals collect the mineral calcium carbonate from the seawater to form a hard skeleton. When the animal dies, the skeleton remains. As growing corals continually build up their skeletons, they form a reef. The coral reef provides a home for many sea creatures.



D is for **damselfish**. The many different kinds of this little fish have a variety of colors, from drab to bright and plain to patterned. Many damselfish eat tiny sea creatures called plankton, but others munch on seaweed. They swim out of and around the coral while feeding, but stay near the bottom, to protect their eggs if they have any.

E is for **echinoderms**, sea animals with spiny skin. Their arms or other body parts grow outward from a center point. Sea stars, sea urchins, and sea cucumbers are echinoderms.



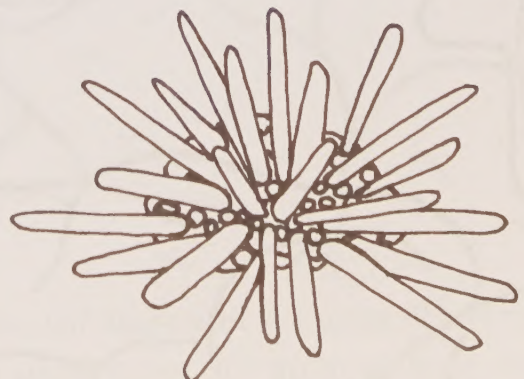
sea cucumber



freckled sea star

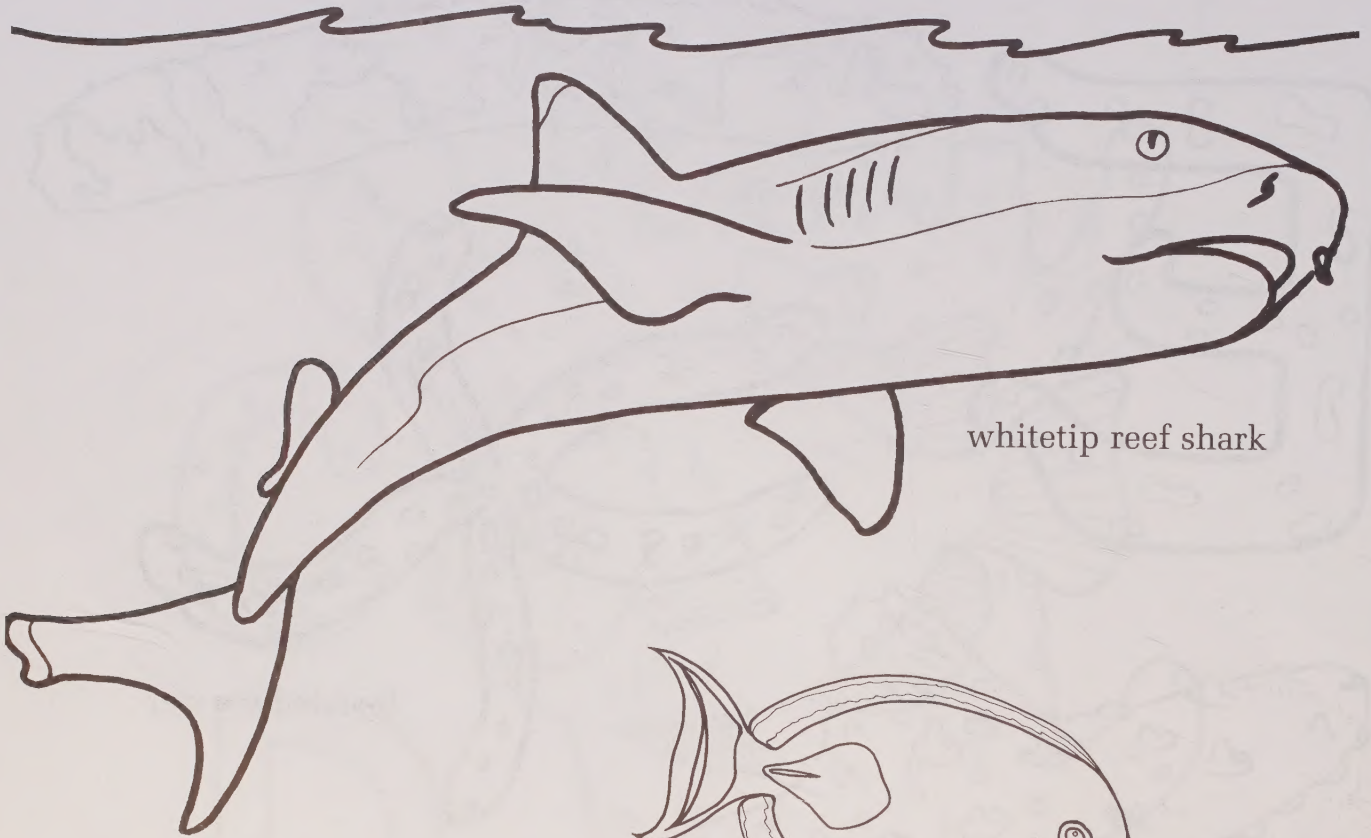


Hawaiian sea star

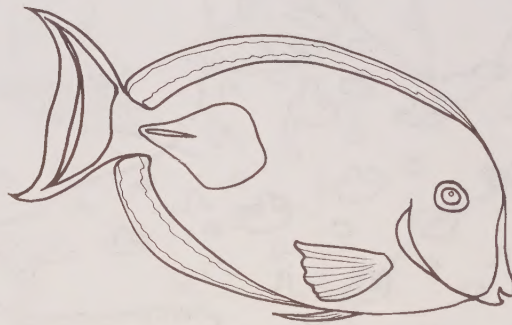


slate pencil urchin

F is for **food** web. The animals and plants of the coral reef depend on each other to stay alive. For example, one of the largest fish of the reef, the shark, eats other fish, like the surgeonfish. Surgeonfishes (also called tangs) eat algae, plants, and even fish eggs. Algae and plants must have sunlight to make their own food. Everything is linked together, like a chain. The various food chains link together to form the food web.



whitetip reef shark

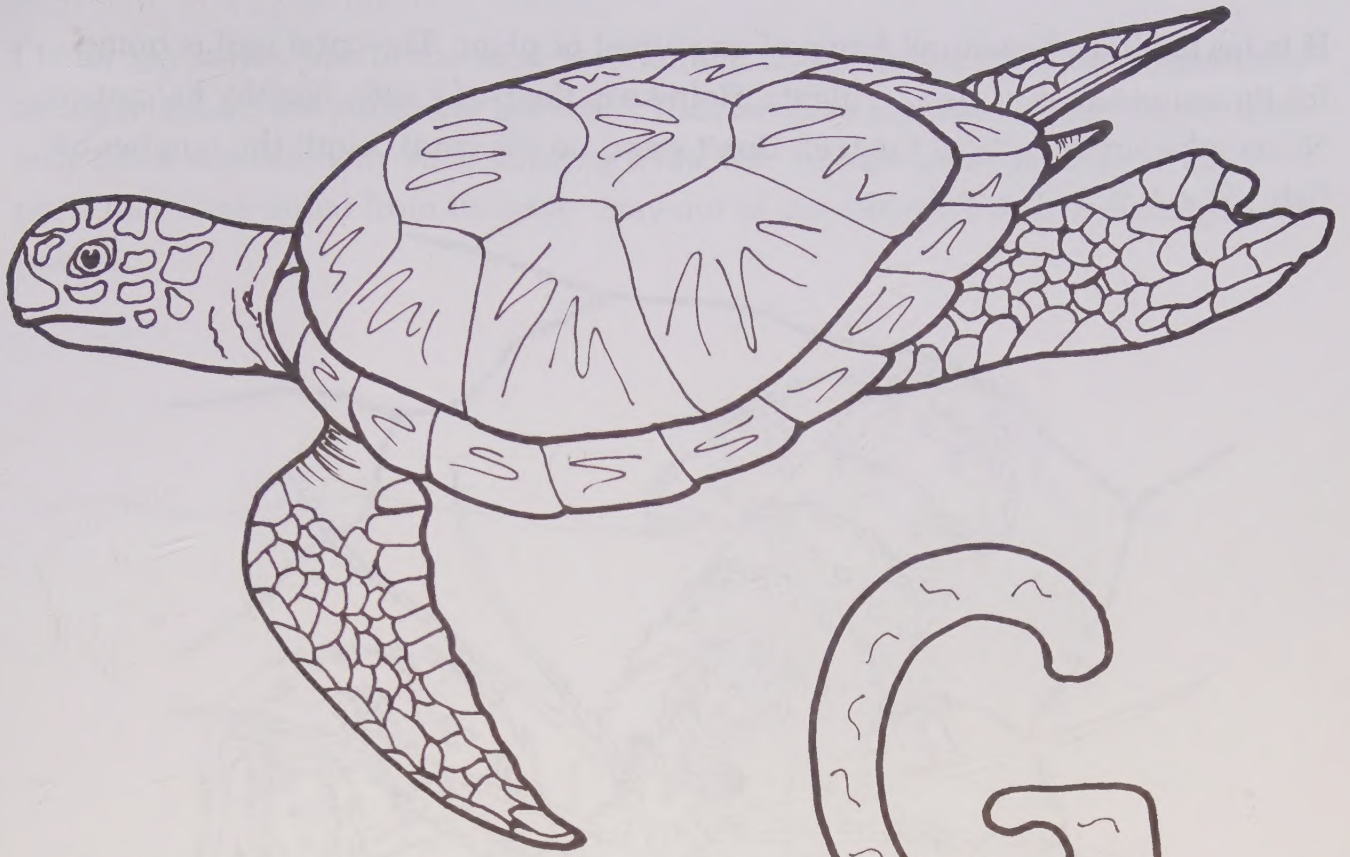


Achilles tang



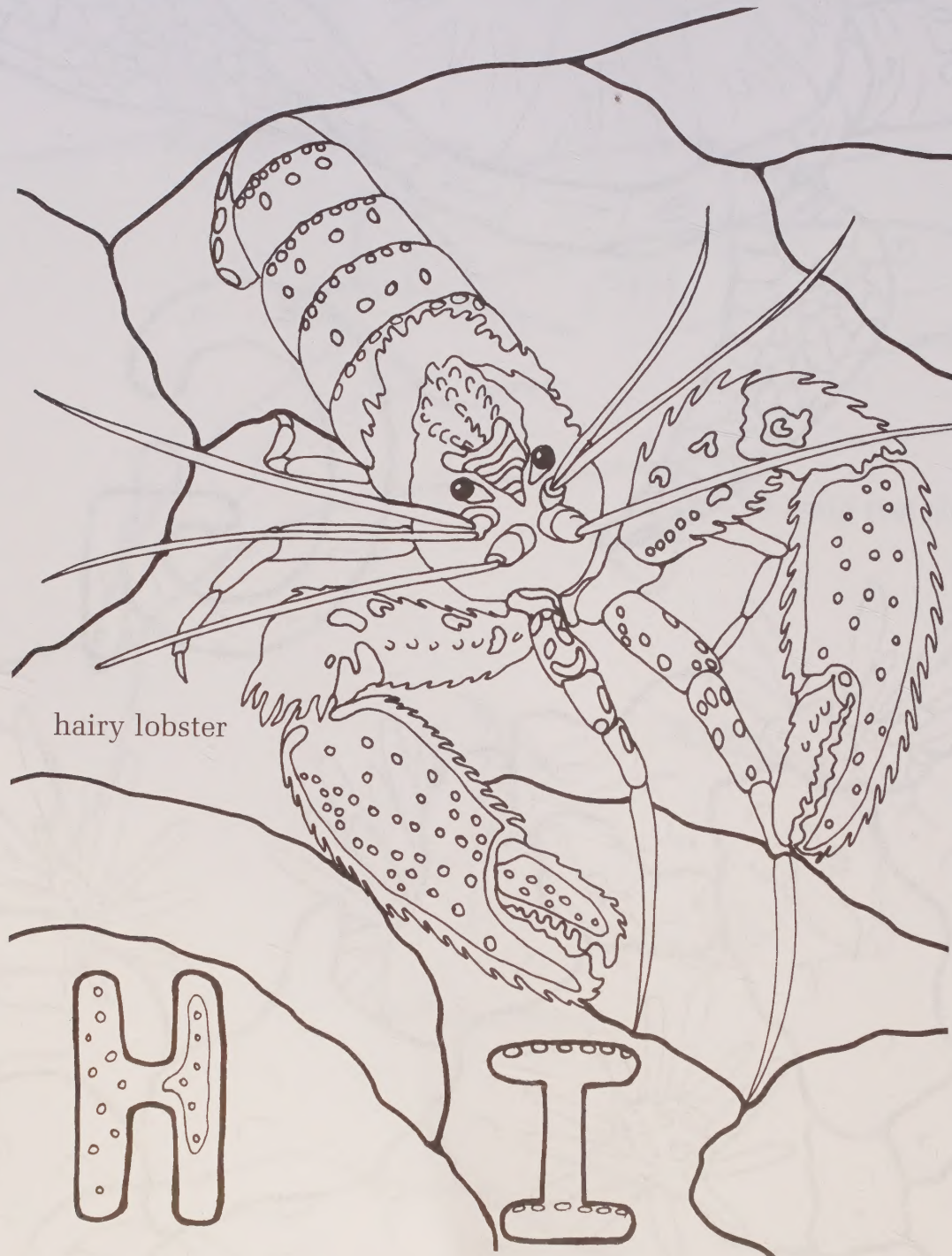
limu





G is for **green** sea turtle. Green sea turtles, *honu*, eat algae and sea grass. They can rest underwater, hidden among the rocks or in small caves, for up to an hour. But since they are reptiles, they must come up to the water's surface to breathe air. They were once hunted for food. Not long ago there were not many *honu* left. Now laws protect them, and swimmers and snorkelers are beginning to see more of them.

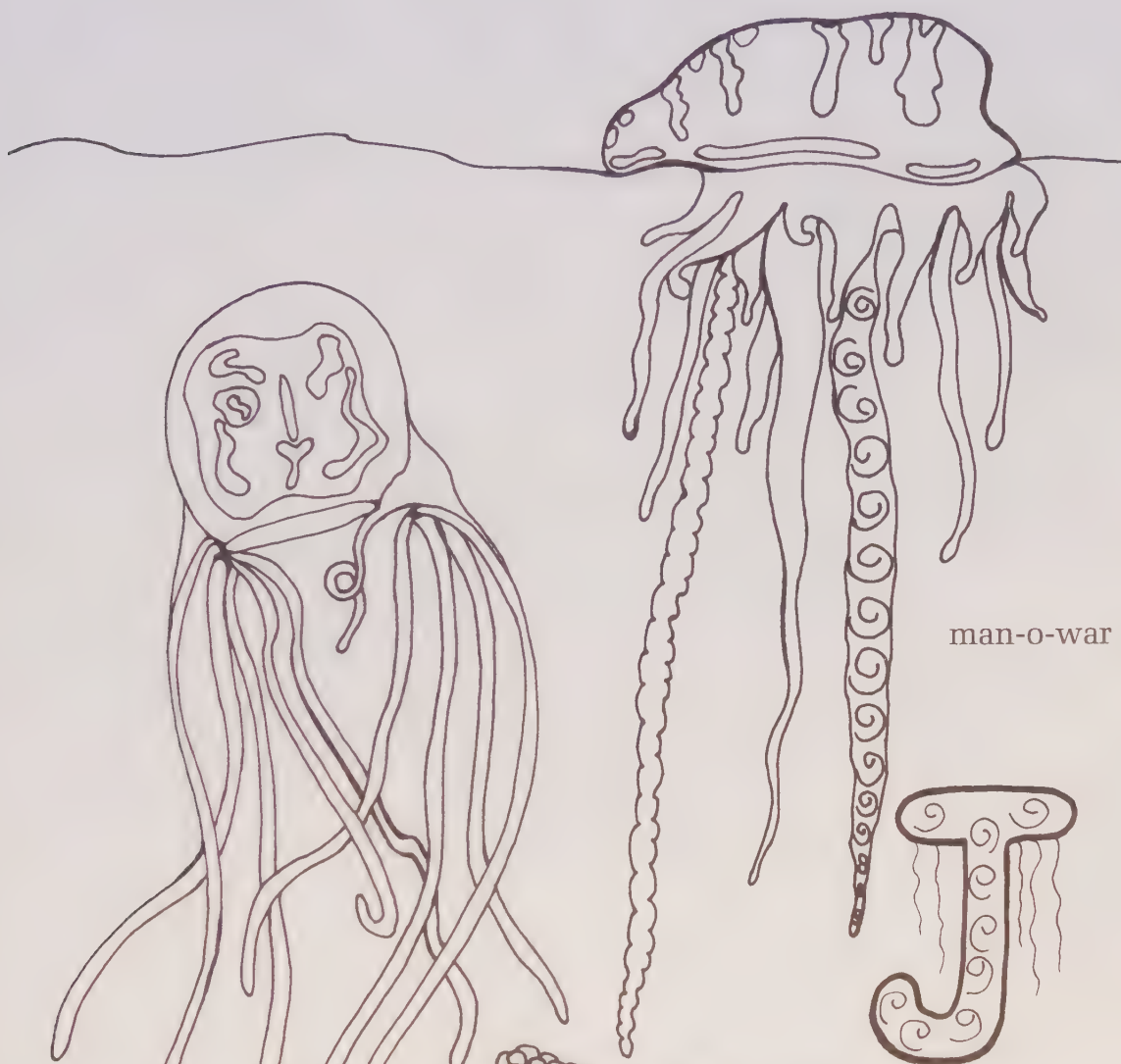
H is for **habitat**, the natural home of an animal or plant. The coral reef is home for thousands of animals and plants. Help keep the reef a safe, healthy habitat. Never take anything from the reef. Don't stand on the coral. Limit the number of fish you catch from a reef.



hairy lobster

I is for **invertebrate** animals. Invertebrates do not have backbones. You have already read in this book about bivalves, corals, and echinoderms. Other invertebrates include sponges, sea jellies, sea anemones, sea urchins, octopuses, snails, worms, shrimps, and lobsters. Are you an invertebrate? Of course not!

J is for sea **jellies**, one of the most well known invertebrates. Although commonly called jellyfish, sea jellies are not really fish, because fish have backbones. A sea jelly has a sac-like body with stinging tentacles. Tentacles are the long, stringy parts that hang down from its body. Stay out of the water when warning signs are posted.



man-o-war sea jelly



sea wasp, or box sea jelly



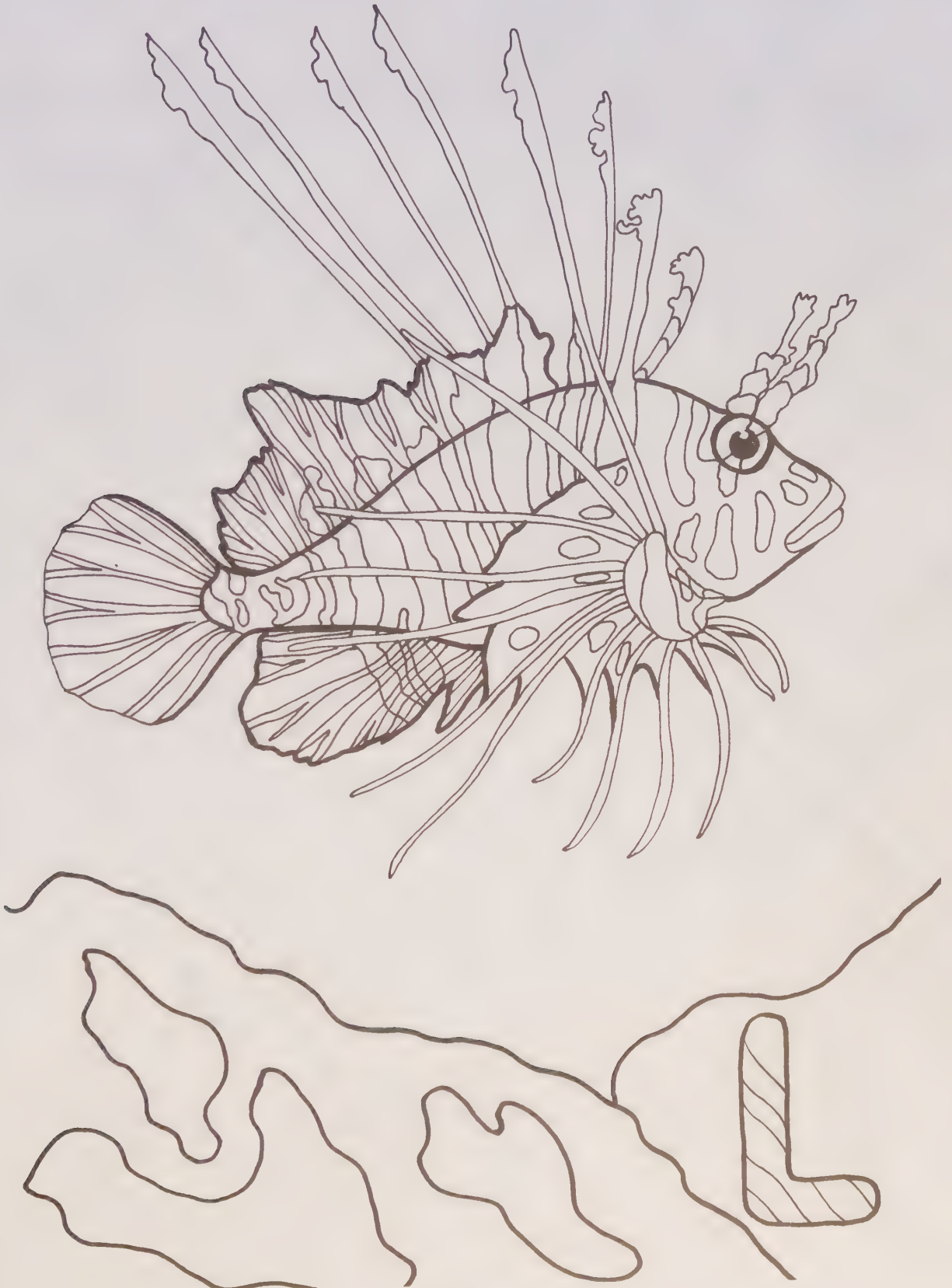
lagoon, or upside down, sea jelly

K is for **Kona** crab, also called the frog crab. Kona crabs sit back on their hind legs, looking ready to jump. They never do though, because they are crabs, not frogs! In fact, they are quite shy and dig their way backward into the sand at the smallest threat of danger.

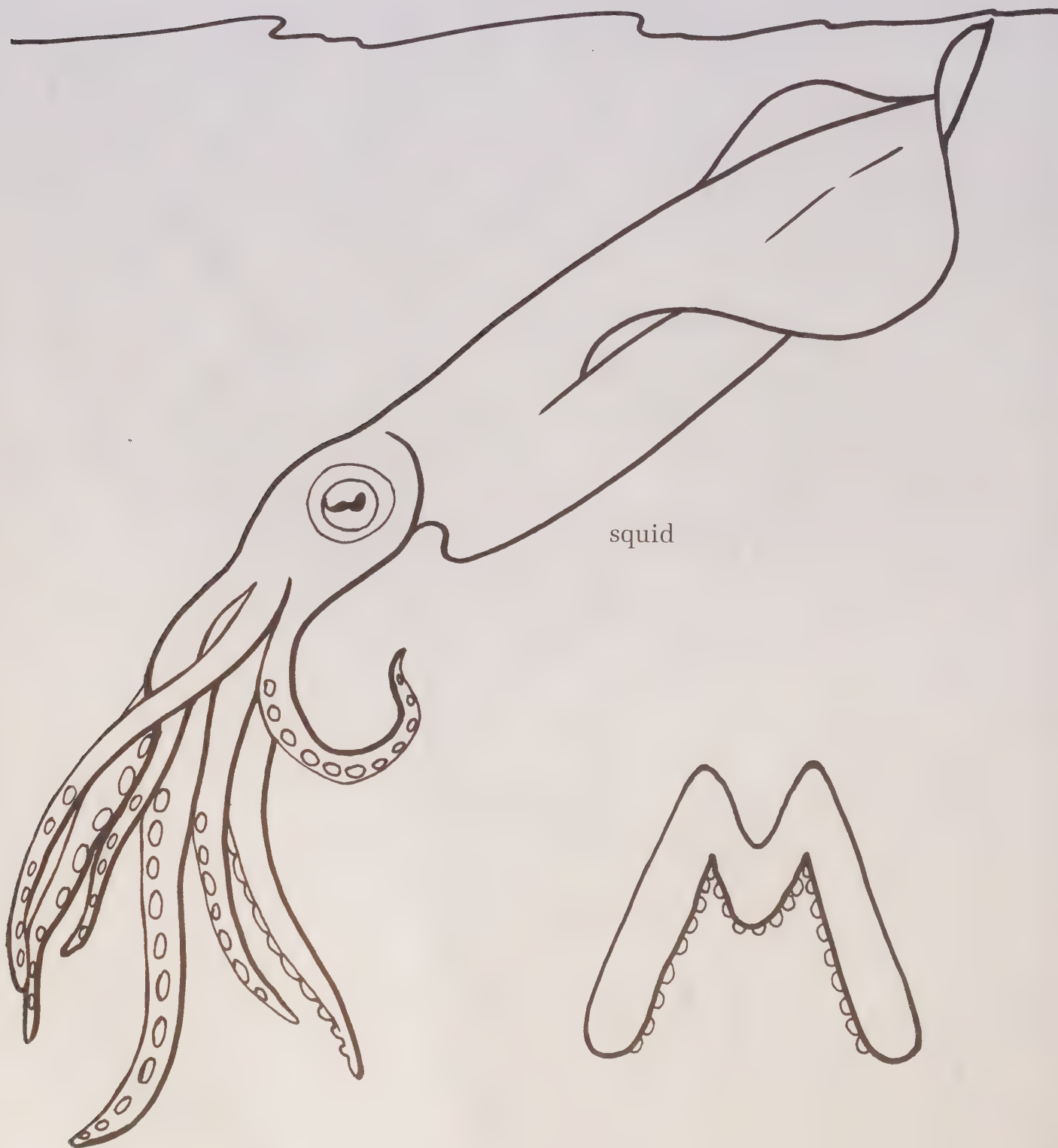
K

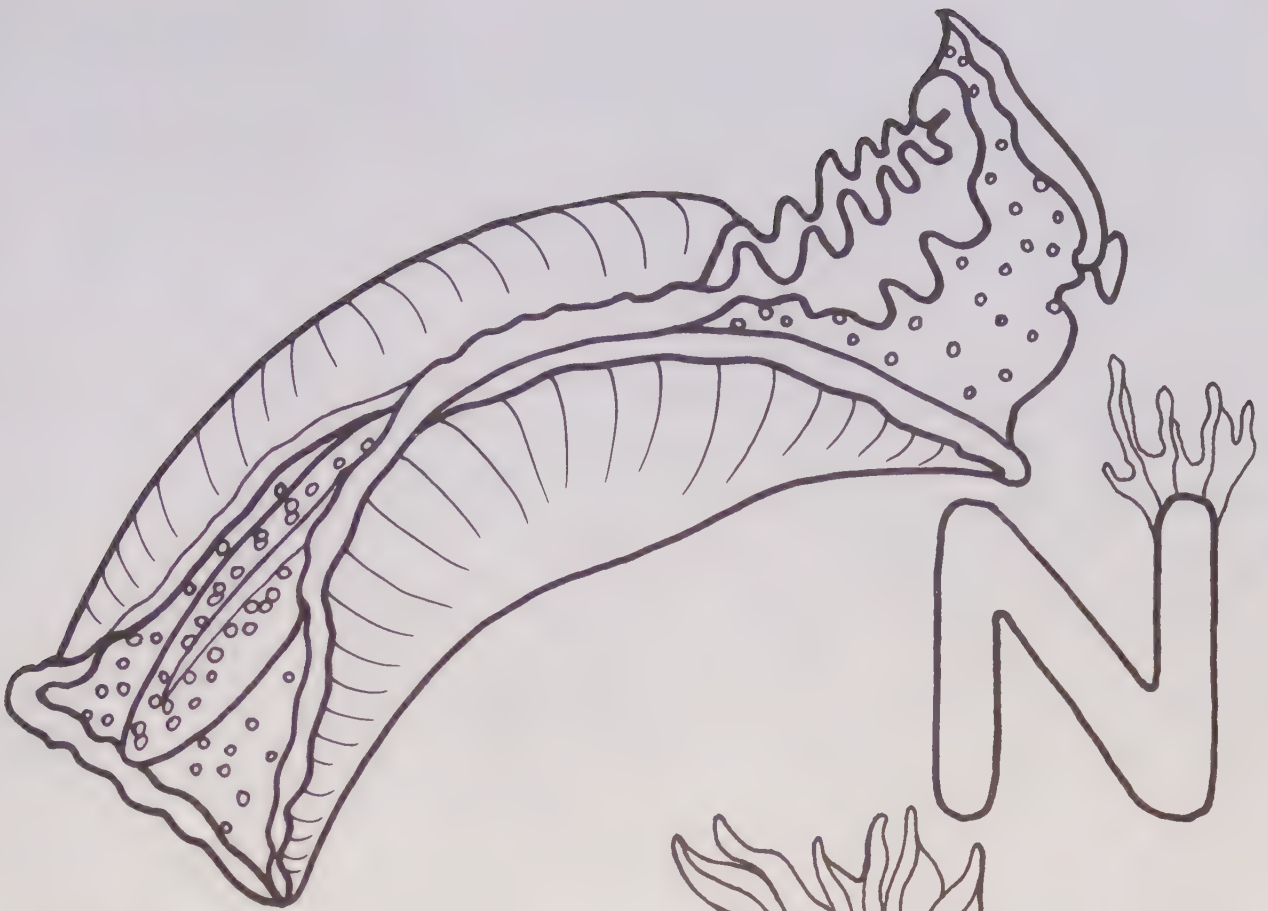


L is for **lionfish**. The lionfish is stunning in every way. Its red and white colors are beautiful, and its spines are poisonous. The Hawai'i species, which has shorter spines, is known as a turkeyfish.

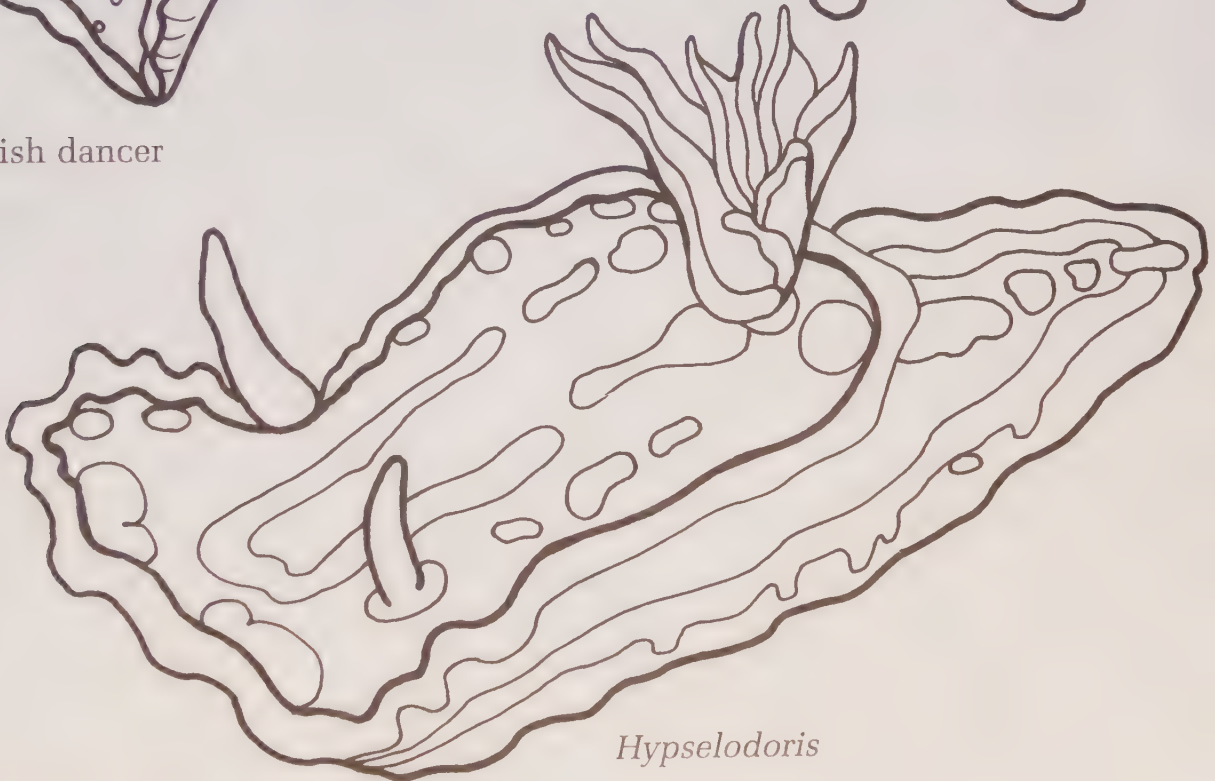


M is for **mollusks**, soft-bodied animals that usually have a limestone shell. Can you think of any animals like that? I'll give you a hint: you read about them under the letter **B**. If you said clams, mussels, and oysters, you were right! Other mollusks include snails, octopuses, and squids.





Spanish dancer

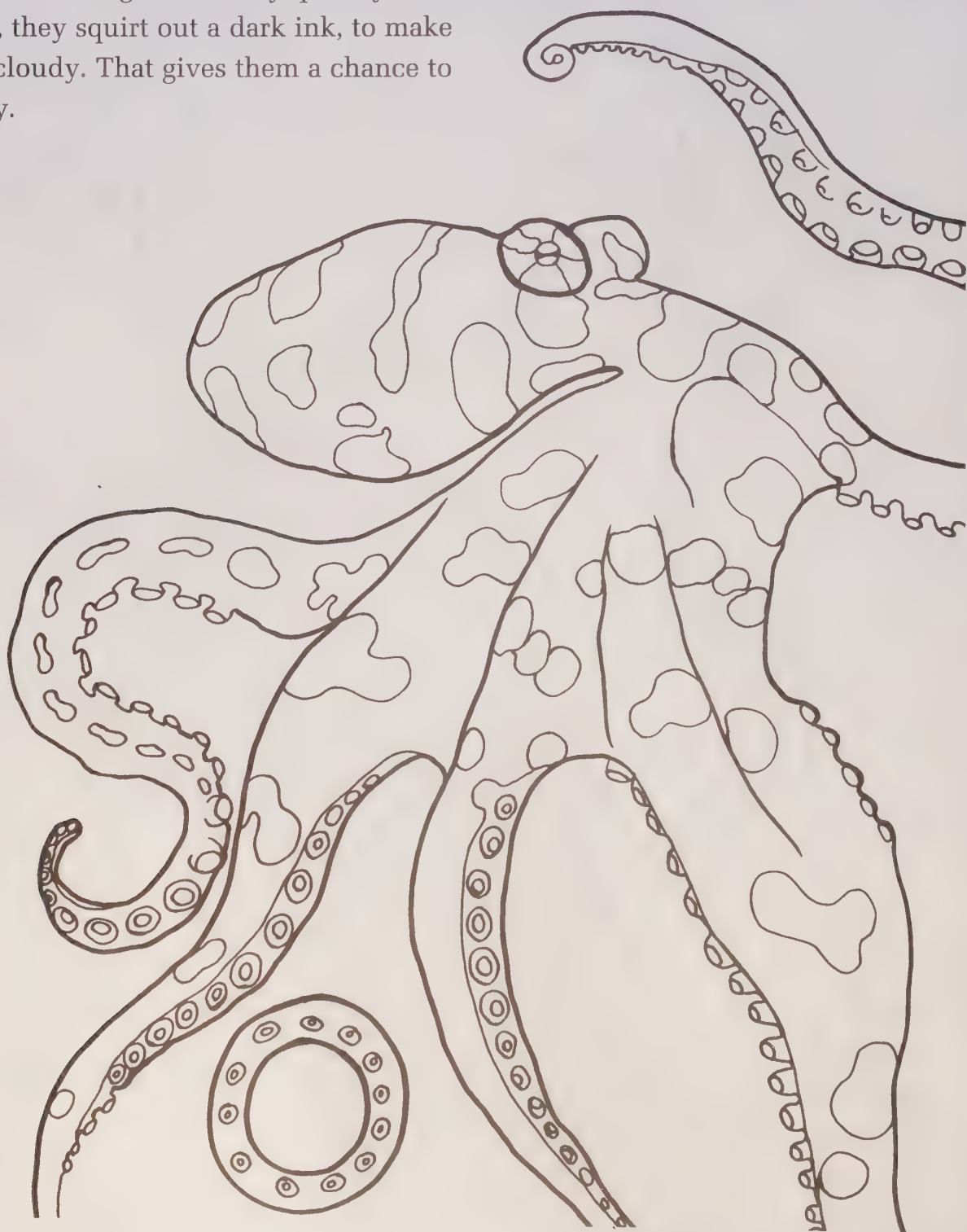


Hypselodoris

N is for **nudibranch** (NOO duh brangk), also called a sea slug. A nudibranch is actually a mollusk without a shell. One of the biggest nudibranchs found in Hawai'i is the bright-red Spanish dancer. When it swims it looks like a Spanish dancer's dress swaying to the music.

O is for **octopus**. The octopus, and its cousin, the squid, are mollusks without shells. Octopuses are shy animals that usually hide in coral caves while resting, but come out to feed. In fact, you can tell where their caves are by the pieces of crabs, lobsters, and snails in front of them.

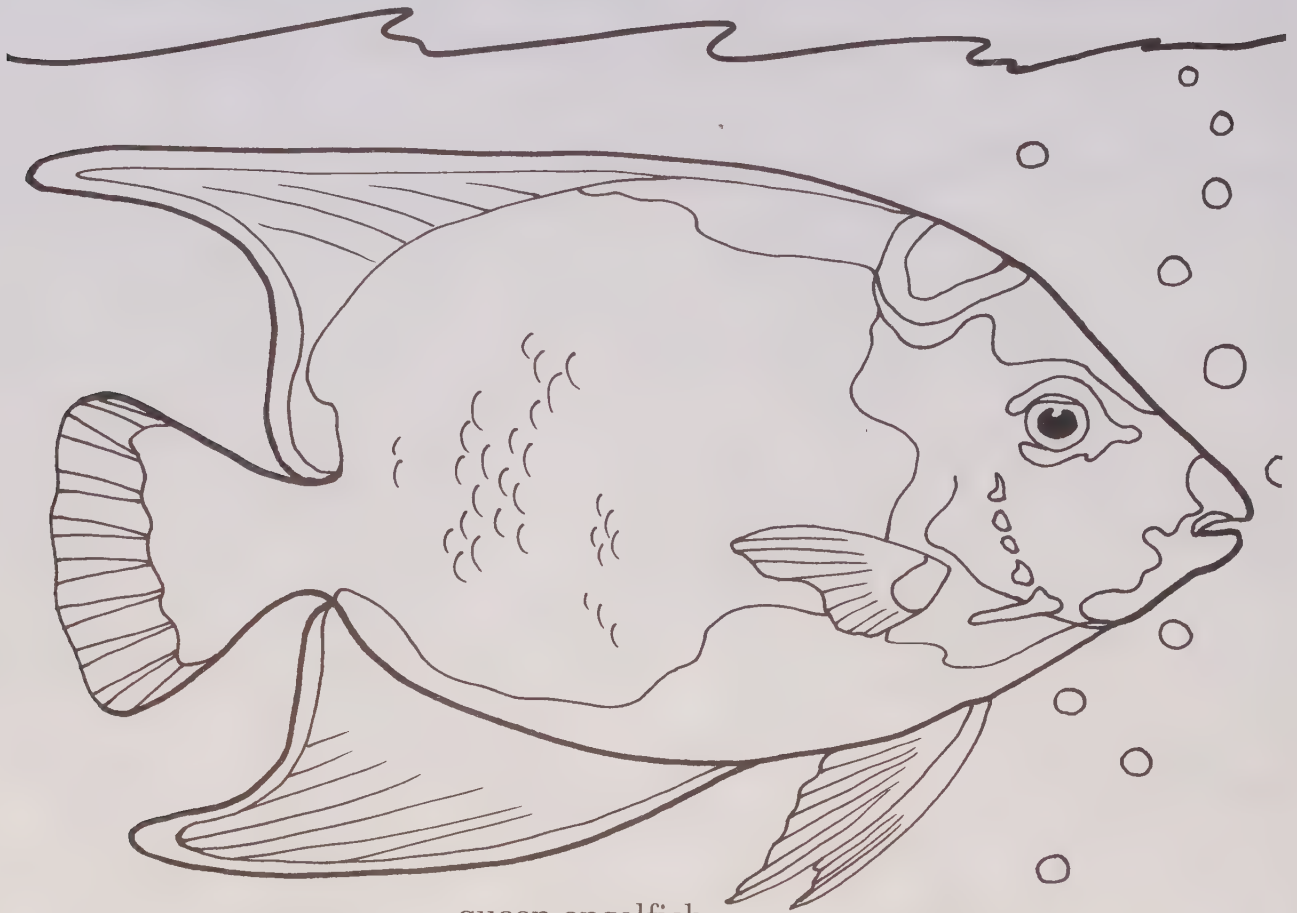
Octopuses can change color very quickly. If frightened, they squirt out a dark ink, to make the water cloudy. That gives them a chance to swim away.



P is for coral **polyps**, the tiny animals that form coral. They usually have bag-shaped bodies with a mouth on top, surrounded by tentacles. When tiny animals called plankton or zooplankton drift by, polyps use the stinging tentacles to stun them. Then they eat them. Do you remember any other animals with stinging tentacles? Of course, the sea jellies!



Q is for **queen** conch, **queen** angelfish, and **queen** triggerfish. None of these animals live in Hawaiian coral reefs. They can, however, be found in coral reefs in the Atlantic Ocean and the Caribbean Sea.

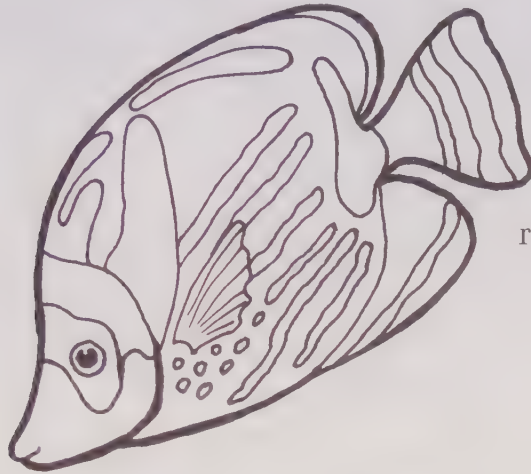


queen angelfish

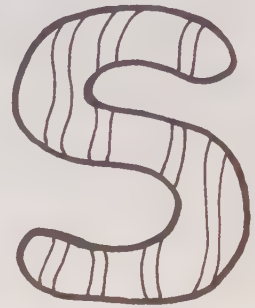


R is for coral **reef**, a huge limestone formation made of coral skeletons. The reef reaches just above or below the surface of the water, providing a habitat for thousands of plants and animals. A fringing reef grows right along the shoreline of islands or continents. A barrier reef is found farther offshore. The third kind of reef is an atoll, which you read about under the letter **A**.

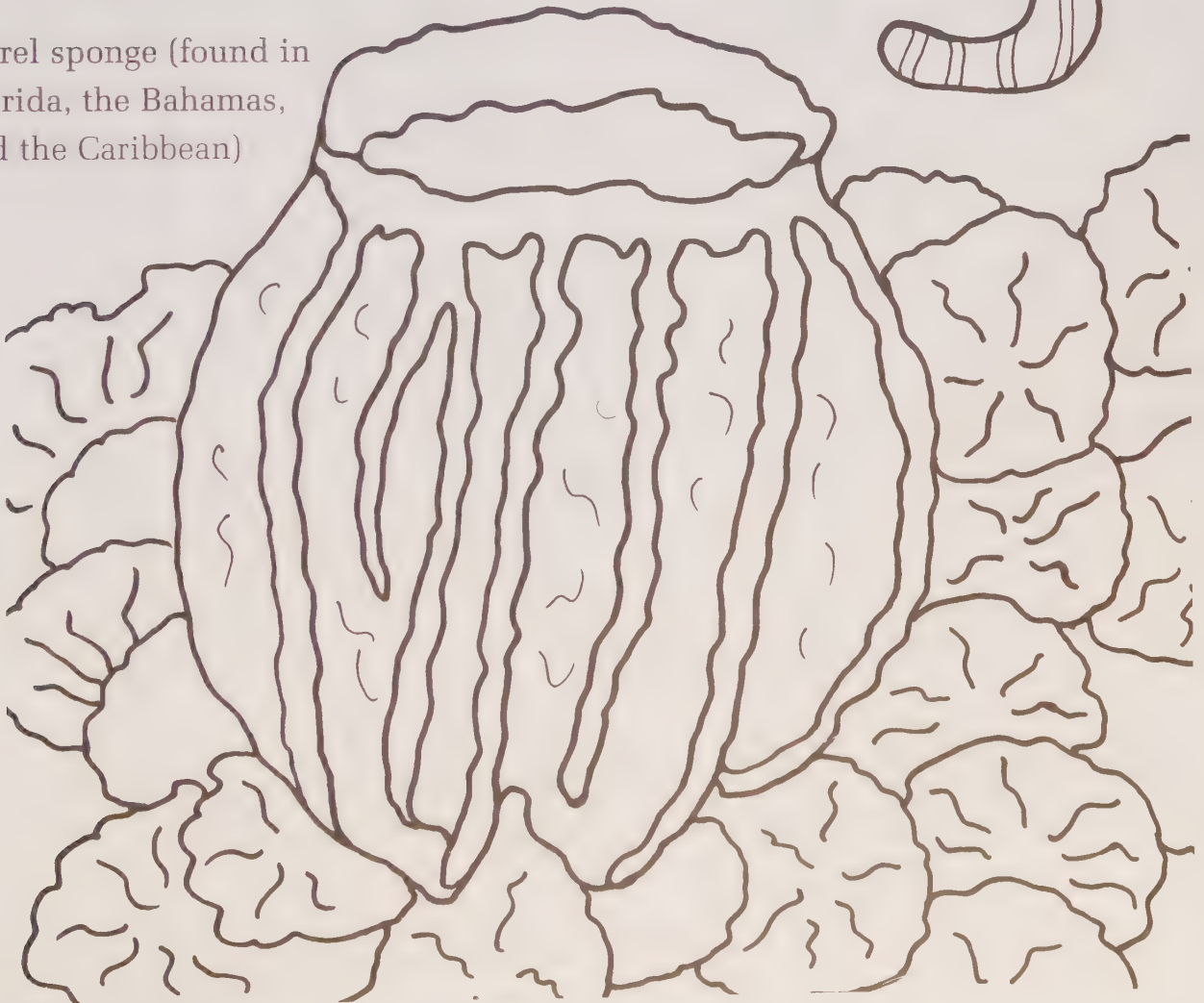
S is for **sponge**. Did you know that sponges are animals? Like the sponge you wash dishes with, they have a lot of holes in them. Reef sponges eat very tiny sea creatures, using the holes in their bodies, since they have no mouth. **S** is also for snorkelers and scuba divers, who visit the reef to admire its beauty. Snorkelers look underwater while swimming near the water's surface. Scuba divers go deeper to explore the reef bottom and caves.



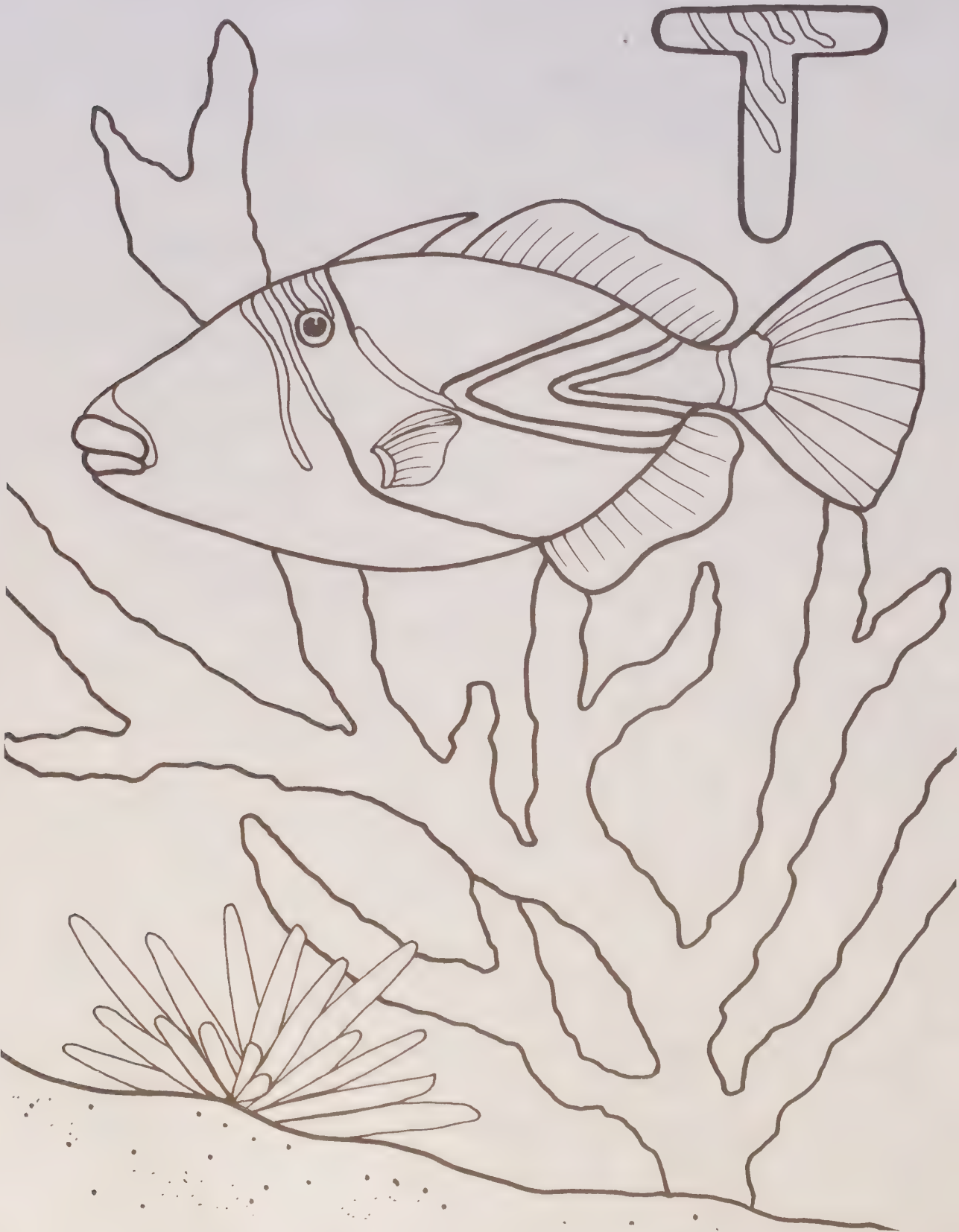
raccoon butterflyfish

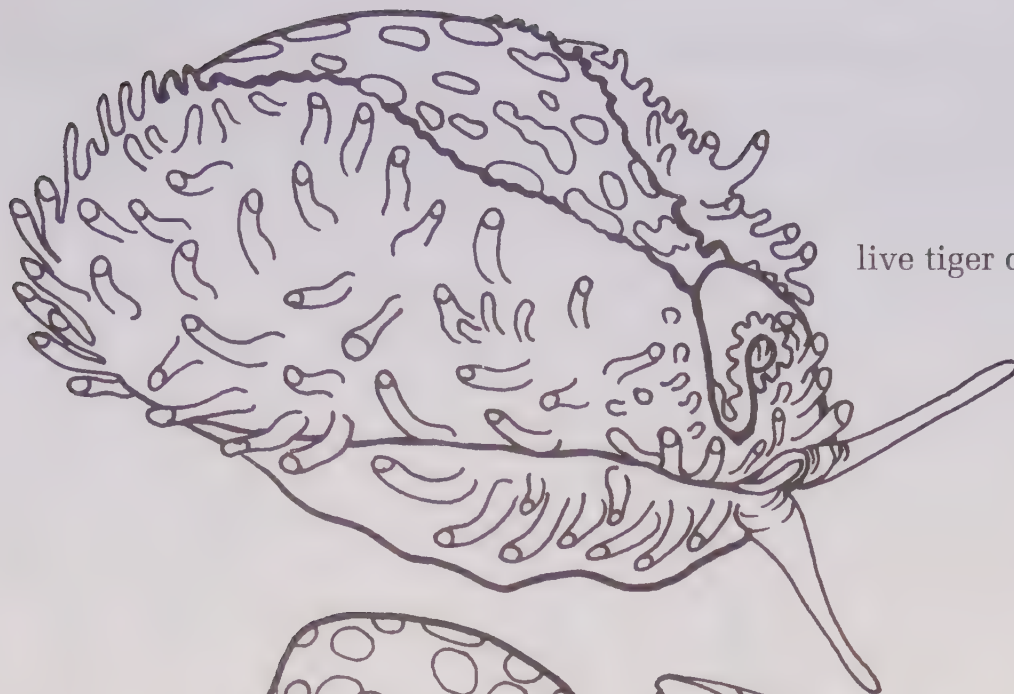


barrel sponge (found in Florida, the Bahamas, and the Caribbean)

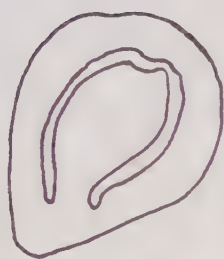


T is for reef **triggerfish**, the unofficial Hawaiian state fish. The Hawaiian name is *humuhumu-nukunuku-ā-puaʻa*, a long name for a little fish. The triggerfish has a small mouth and strong teeth, perfect for eating shelled invertebrates and sea urchins.





live tiger cowry



golden horseshoe
cowry



sieve cowry



marble cone



Hebrew cone



marlinspike auger

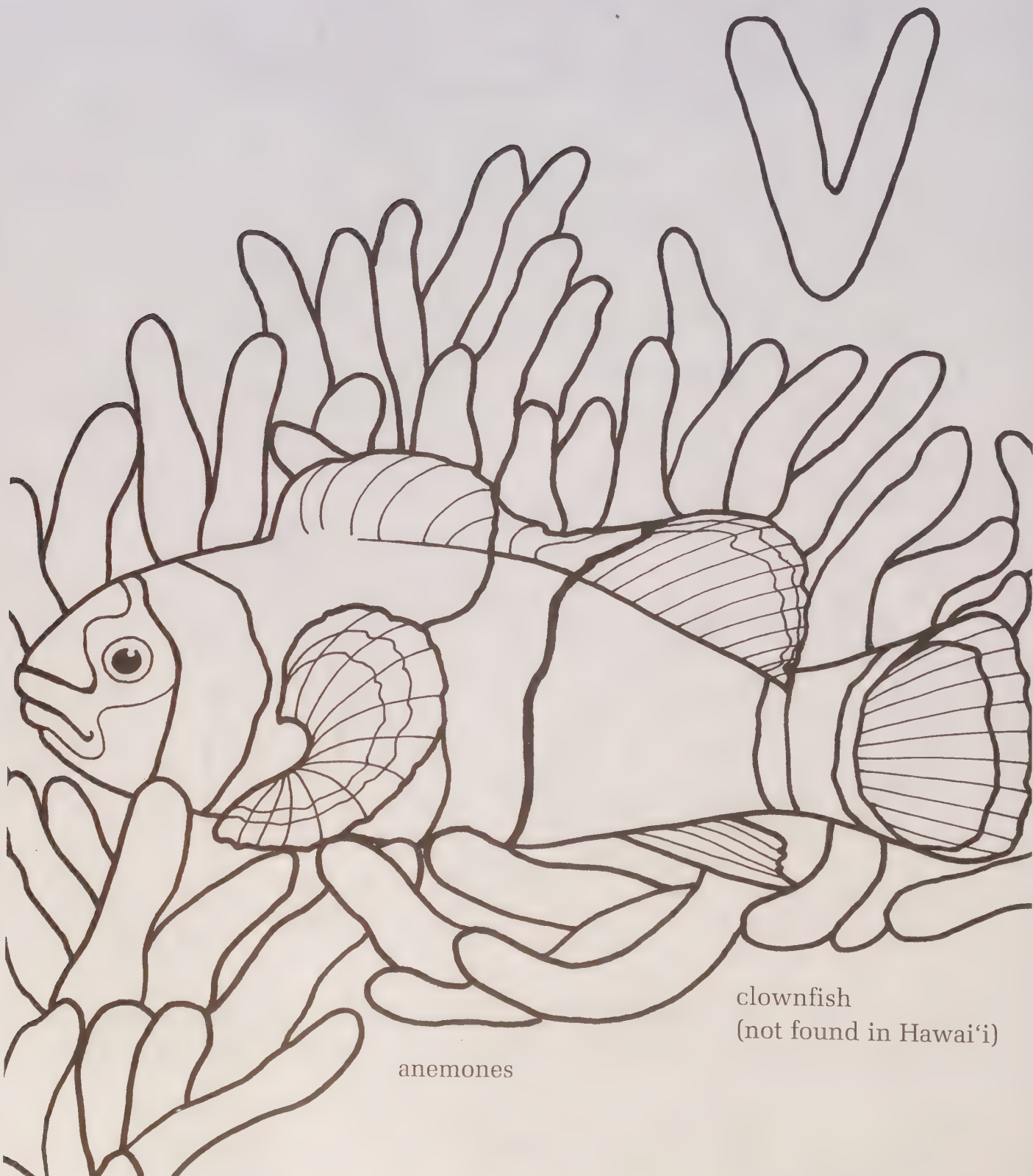


eglantine cowry
(not found in Hawai'i)



U is for **univalves**, soft-bodied mollusks with a single shell. ("Uni" means "one.") Some of the kinds found in Hawai'i are cowries, augers, and cones.

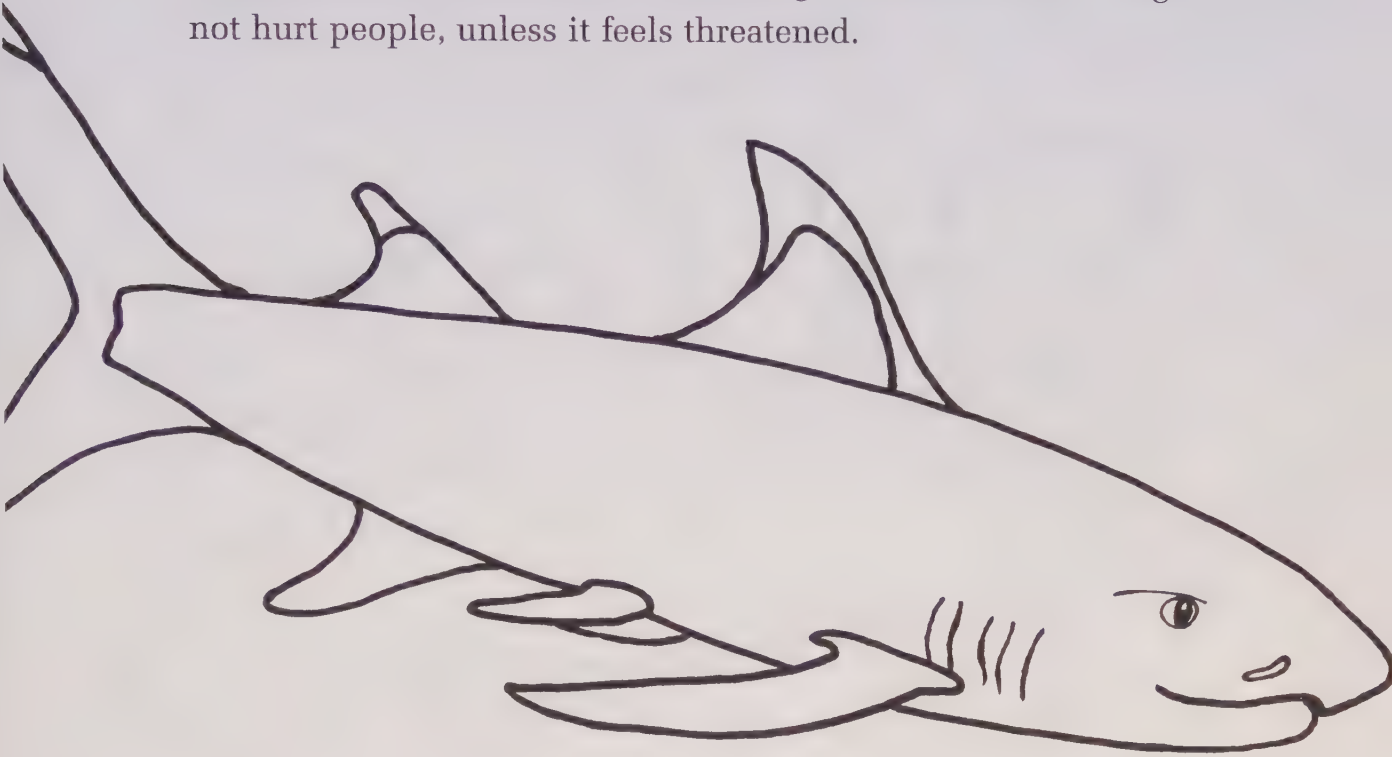
V is for **venom**, a harmful chemical used by many reef plants and animals to protect themselves. Reef animals deliver venom with a bite, poke, or sting. Corals, sea jellies, and sea anemones use the venom in their tentacles to stun, or temporarily paralyze, the creatures they eat.



anemones

clownfish
(not found in Hawai'i)

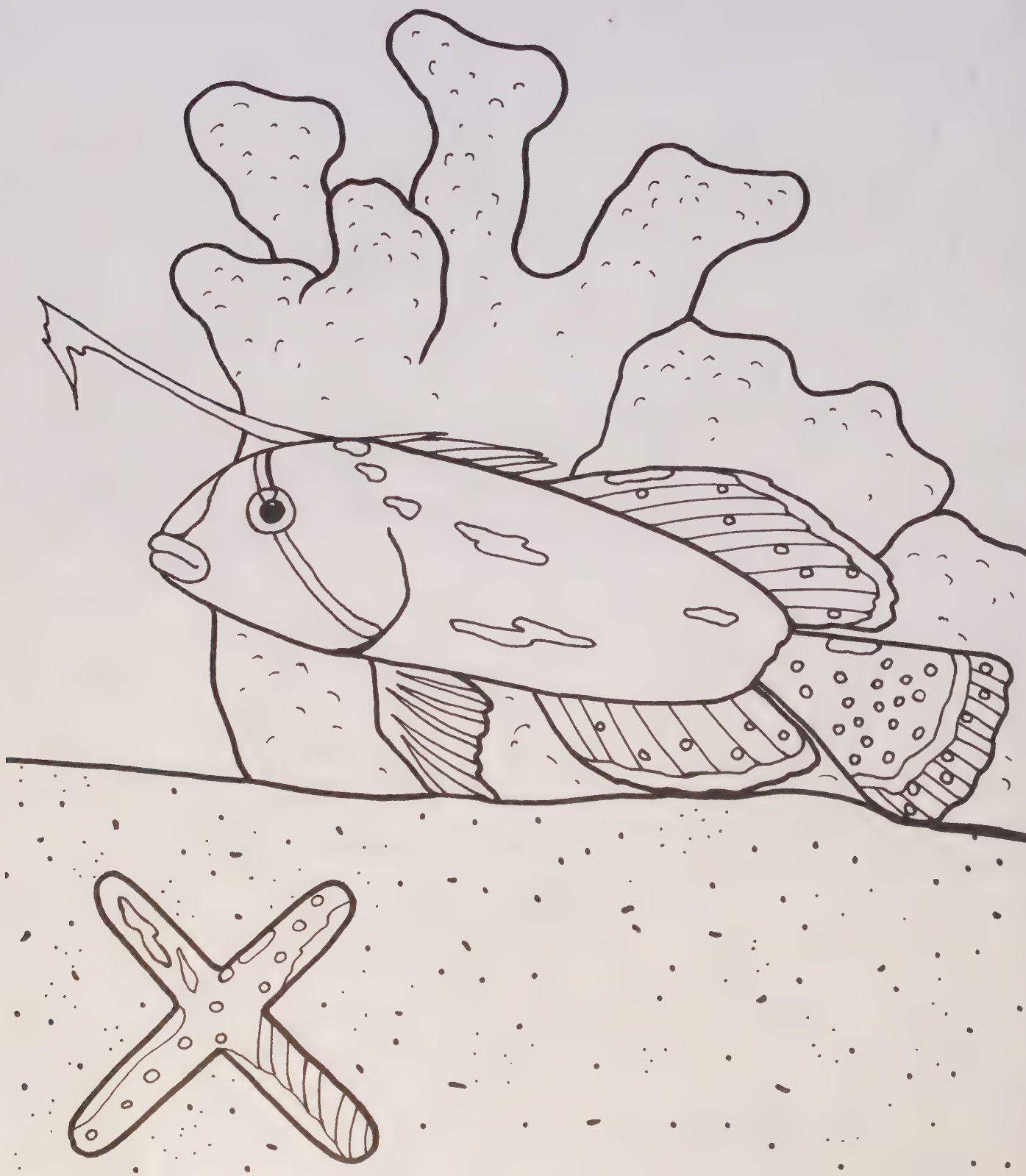
W is for **whitetip** reef shark. Most Hawaiian sharks live in deeper waters, but the whitetip reef shark lives in the coral reef. It is nocturnal, which means it is active at night, when it hunts fish, crabs, and lobsters. During the day, it is likely to be resting in caves or under ledges. It will not hurt people, unless it feels threatened.



blue *ulua*

X is for *xyrichtys pavo*, the scientific name for the peacock razorfish.

This rather odd-looking fish has what looks like a long horn sticking out from above its eyes. If it gets scared, it can dive into the sand and bury itself.



Y is for **yellow** tang, one of Hawai'i's most popular fish. When yellow tangs are young, they live alone, in the coral, but when they get older, they live in a large school of yellow tangs.

Z is for **zooplankton**, tiny sea creatures that are eaten by animals like coral, sponges, or sea anemones that catch their food as it drifts by. Zooplankton eat algae and other tiny plants that drift in the sea. They are an important part of the coral reef food web.



hermit crab

Y Z



Glossary

atoll: a ring-shaped or U-shaped coral island and reef surrounding a lagoon.

barrier reef: an offshore reef running parallel to the coastline.

bivalve: a soft-bodied mollusk with a two-part shell. Oysters, mussels, and clams are bivalves.

clownfish: a fish found in shallow tropical waters of the Indian and Pacific Oceans, particularly around New Guinea and the islands of Micronesia (but not Hawai'i). It seeks protection by living with the venomous anemone.

coral: a rocklike material (limestone) formed from the hard outer coverings of tiny animals called coral polyps.

coral polyps: tiny animals that form coral reefs. They usually have bag-shaped bodies with a central mouth on top, surrounded by stinging tentacles.

coral reef: a huge limestone formation made of coral skeletons.

damselfish: a common reef fish.

echinoderms: sea animals with spiny skin and arms or other body parts that grow outward from a center point. Sea stars, sea urchins, and sea cucumbers are echinoderms.

food chain: the relationship of an animal to what it eats and to what eats it.

food web: all the possible feeding relationships in an ecosystem.

fringing reef: a reef that grows along the shoreline of islands or continents.

green sea turtles: reptiles known in Hawai'i as *honu*. They were once hunted for food. A threatened species, they are now protected by federal and state law.

habitat: the natural home of an animal or plant.

Hawaiian turkeyfish (also known as a lionfish): a red-and-white fish with showy fins and poisonous spines.

invertebrates: animals without backbones. Bivalves, corals, echinoderms, sponges, sea jellies, sea anemones, sea urchins, octopuses, snails, worms, shrimps, and lobsters are invertebrates.

jellyfish: See **sea jelly**.

Kona crab: a shy crab, also called the frog crab, that digs its way backward into the sand at the smallest threat of danger.

lagoon: a body of water separated from the sea by coral reefs.

lionfish: a red-and-white fish with showy fins and poisonous spines.

mollusks: soft-bodied invertebrate animals, some of which have hard shells. Clams, mussels, oysters, snails, octopuses, and squids are mollusks.

nocturnal: active at night.

nudibranch: a mollusk without a shell. It is also called a sea slug.

octopus: a mollusk with eight tentacles. Octopuses can change color very quickly. If frightened, they squirt out a dark ink.

queen angelfish: a reef fish found in tropical Atlantic and Caribbean waters.

queen conch: a mollusk found in the Caribbean Sea.

queen triggerfish: a reef fish found in tropical Atlantic waters.

reef triggerfish: the unofficial Hawaiian state fish. The Hawaiian name is *humuhumu-nukunuku-ā-pua'a*.

sea jelly: an invertebrate with a sac-like body and stinging tentacles.

sponge: an animal that eats very tiny sea creatures, using the holes in its body since it has no mouth.

univalves: soft-bodied mollusks with single shells. Cowries, augers, and cones are univalves.

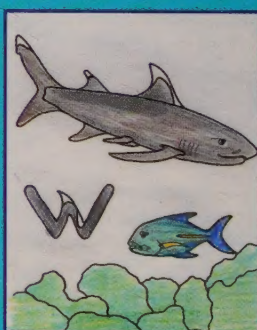
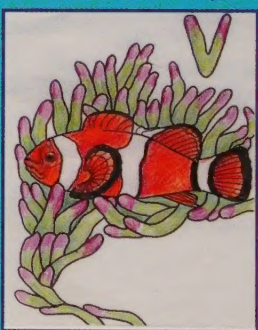
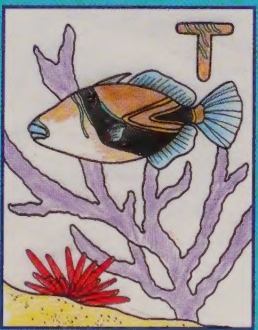
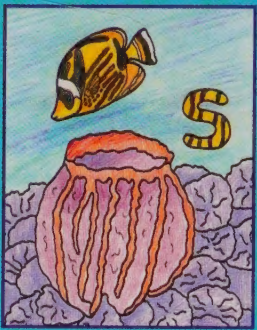
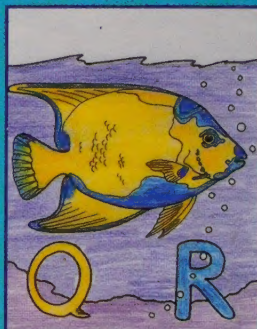
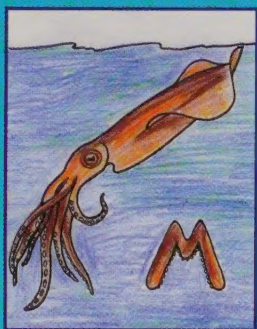
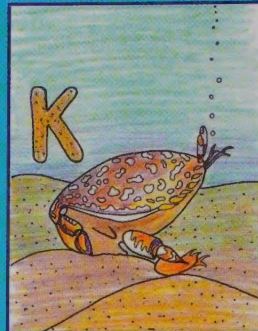
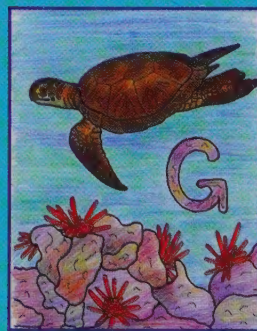
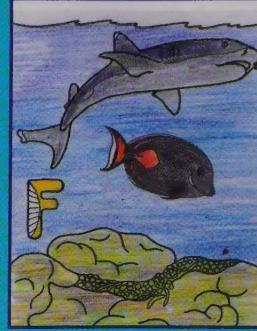
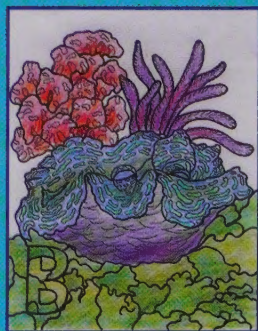
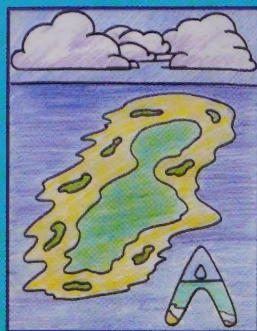
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whitetip reef shark: a reef shark that hunts at night for fish, crabs, and lobsters.

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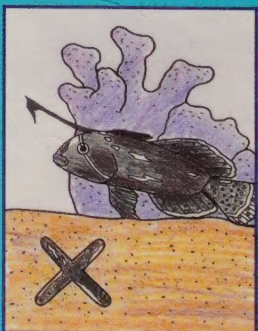
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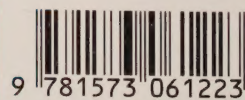
Terry Pierce has a B.A. in Early Childhood Development from California State University in Long Beach. A former Montessori teacher, she is now a full-time writer whose special interest is Hawai'i's natural history.



Kristen Kofsky paints the people and places of Hawai'i in her Hōlualoa studio on the Kona side of the Big Island. Her oil and watercolor paintings are available as greeting cards and prints and as illustrations in books for children.



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